

by the amount which they pay to the window-duties.

TABLE, 1845.				
	No. of Windows.	Window Duties Assessed.	Assessed to Property Tax.	Per Cent.
37, Chapel-street, Edgeware rd.	18	£. s. d.	24	21½
18, Upper Rathbone-place	29	6 3 3	35	32
21, Peter-street, Westminster.	37	9 8 1	35	26½
6, Marylebone-court	13	3 7 11	37	13½
Francis Beesley, Plasterer, Lancaster-court	20	6 3 6	32	19½
John Weston, Plasterer, Chapel-court	21	6 12 6	40	16½
T. Miller, Tailor, 36, Marylebone-lane	11	4 15 0	44	10½
31, Broad-street, Westminster.	25	4 9 0	40	21½
8, Cross-street, Westminster.	39	10 6 9	43	33
13, Bulstrode-mews, rag and linoleum shop	19	8 16 1	50	10½
6, Dufour's-place, Westminster	27	9 8 7	50	10½
6, Little Marylebone-street	23	7 11 31	50	15
3, Little Marylebone-street	34	9 4 3	65	14½
68, Poland-street, Westminster	29	9 17 4	63	15½
10, Poland-street, Westminster	35	13 3 8	80	16½
74, Great Portland-street	30	10 15 10	70	15½
23, Great Portland-street	26	8 19 8	100	9
37, Foley-place	33	11 16 9	126	9½
340, Oxford-street	13	3 9 7	148	14
270, Regent-street	13	8 9 4	160	19
54, Upper Marylebone-street	31	12 15 3	200	64
132, Oxford-street	17	4 15 8	230	7
133, Oxford-street	19	1 10 9	250	1
154, Regent-street	16	3 7 11	350	17
114, Regent-street	27	7 1 10	315	21
238, Regent-street	20	6 3 5	335	15
1, Mansfield-street, Portland-place, H. T. Hope, Esq. M.P.	98	29 5 3	690	4½
Whitcomb-gardens, Sir W. Peel, Bart., First Lord of the Treasury	72	21 6 9	700	3½
17, Portman-square, Duke of Newcastle	62	21 17 6	700	3
1, Upper Berkeley-street, Montagu-house	96	30 10 2	750	4
23, Upper Grosvenor-street, Marquess of Westminster	125	37 5 1	1000	32
Privy Gardens, Duke of Buccleuch	132	39 13 6	1320	3
South Audley-street, Earl of Chesterfield	160	47 5 3	2000	24
Duke of Bedford	161	47 5 3	2000	24
Apsley House, Duke of Wellington	129	37 5 3	2000	17
20, Manchester-square, Hertford House	104	33 7 9	2000	11
Carlton Club	105	38 7 4	1795	24
Reform Club	283	54 19 0	2075	24

No sordidity can justify, no sophistry can palliate, injustice so glaring, such an unequal sacrifice of the poorer to the wealthier classes, as are exhibited in this plain table of official facts. To add to its iniquity would seem impossible; but we are much mistaken if the following table, illustrative of the comparative amount of relief obtained by the rich and the poor occupiers of houses from the repeal of the house-tax, in preference to the window-duties (which took place in 1831), do not excite equally strong feelings of indignation in the minds of those who reflect by what class it is that taxes are imposed and repealed. If that class has any regard for common justice, any desire to remove the almost universal impression that it legislates solely for its own advantage, and without regard for the interests of the community at large, it will take the earliest opportunity of effacing from the statute book such a damning record as is here presented of the justice of the charge. Up to this time we may believe that they have legislated in ignorance; but the facts are now laid bare, the plea of ignorance will no longer avail, and the repeal of the window-tax is a debt which they owe to their own characters, if they wish to continue to be regarded and respected as men of honour and as men of principle."

TABLE, 1835.				
	Windows.	House.	Assessed by Repeal of House Tax to the amount of	Per Cent.
RICH.				
The Earl of Chesterfield	42 47 9	205 6 8	861	66½
The Marquess of Westminster	33 10 3	173 19 3	365	55
The Duke of Bedford	92 17 9	170 17 8	390	60
The Duke of Wellington	33 18 3	262 1 4	773	77½
Regent-street, new street built to evade tax.	3 10 3	19 16 8	560	
POOR.				
Francis Beesley, Plasterer, Lancaster-court	3 13 3	3 12 6	61	
G. H. Haslewood, Little Stanhope-street	7 9 9	7 1 8	98	
John Weston, Plasterer, Chapel-court	6 8 6	4 13 4	93	
William Lee, Publisher, 5, Pall-mall-official	8 3 9	3 18 9	73	
Peter-street, St James's Park	6 17 6	3 18 9	46	

INSTITUTION OF CIVIL ENGINEERS.

ATMOSPHERIC RAILWAYS.

APRIL 29th.—The discussion on the atmospheric system of railways, which had occupied the attention of the Institution for the two previous evenings, was renewed by Mr. Bidder presenting a statement in a tabular form, from which he clearly deduced the tractive force which the atmospheric system was capable of exerting over a pipe of a mile in length, and by taking from this the losses consequent on the friction and gravity of the train, shewed that which was due to the resistance of the atmosphere, &c. His statements were proved by reference to the avowed experiments of Mr. Samuda. His investigations also enabled him to render conspicuous the loss arising from the friction of the air within the tube, which accounted satisfactorily for some apparent discrepancies in the acceleration of velocity of different trains over the mile at the end of the tube. His views on this point were confirmed by the experiments of Mr. C. H. Gregory, and those published in the report of M. Mallet. The discussion of the basis of the deductions, reported by Mr. Stephenson, was then disposed of with the decided and generally prevailing admission of its truth.

The commercial part of the question was then entered upon, and the case of the Norwich and Yarmouth Railway was quoted as one of the most simple character, and one which would be of frequent occurrence. It was shewn by facts and authenticated statements of first cost and expense of working, that if Mr. Samuda's estimate for the apparatus, as applied to the projected Croydon line, was diminished by half, or from 6,000*l.* to 3,000*l.* per mile, the mere interest of the outlay at 5 per cent. would amount to 10*l.* per mile per annum more than the present cost of locomotive power on the Norwich and Yarmouth line. It had been stated before the atmospheric committee of the House of Commons, that a much smaller apparatus could be constructed to do the work of this line. The fallacy of this assumption and the calculations were analysed and clearly exposed, inasmuch as it was shewn to be mechanically impossible for the contrivance to perform the amount of work for which it was designed, and that that work was not analogous to that which was required by the traffic of the Norwich and Yarmouth Railway, inasmuch as the bulk of the traffic was, of necessity, by particular trains, which rendered their weight about four times greater than had been estimated for.

The case of the necessity of a swing bridge of 100 feet opening for the passage of vessels, as at Yarmouth, was suggested as a mechanical problem upon which the adherents of the atmospheric system might be advantageously exercised.

On reverting to the loss arising from the friction of the air in the pipes, two of the principal mining engineers of England characterized it, from their experience in the ventilation of mines, as being of vital importance to the atmospheric system.

The speeds attained on the South Shields and the Newcastle and Carlisle Railways, with the usual number of stoppages, were given, and the deduction substantiated that a velocity of upwards of thirty miles per hour was attained within a distance of three-quarters of a mile from the starting point. Experiments were also quoted, shewing, 1st. That a locomotive train could be stopped in a shorter distance than the train on the atmospheric railway, the nett weight, speed, and number of brakemen being identical; and, 2nd. That the engine and tender alone were stopped in one-fourth of the distance that the train alone was stopped. The main conveniences of the diminution of dust and noise in the case of the atmospheric system were incidentally alluded to, but were admitted not to be of great importance.

LIGHT FOR ALL NATIONS.—Mr. William Bush has addressed a letter to the authorities at Lloyd's, in which he states that he has recommenced his arduous undertaking, by boring to ascertain the substrata of the Godwin Sands; and, at 50 feet beneath the platform, finds nothing but hard sand, nearly as solid as the rock itself. He appears confident of success.

New Books.

A Manual of Gothic Mouldings. By F. A. Paley, M.A., Hon. Sec. to the Cambridge Camden Society. London: Van Veen 1845.

THIS volume treats of the formation of mouldings, their gradual development, combinations and varieties, with directions for copying them. It is illustrated by nearly 500 examples, and will enable all who study it carefully to determine the dates of buildings with greater accuracy than by any other means. The subject is one of great interest, and, up to this time, only slightly investigated. As the author remarks in the introductory section:—

"No person can have devoted much time and pains to the investigation of Christian architecture, as it was practiced in this country during the Middle Ages, without feeling the importance, and at the same time the difficulty, of acquiring an accurate knowledge of Mouldings. That certain conventional forms or details were in use at certain periods, and were uniformly adopted in the constructive decoration of all edifices, ecclesiastical and secular, throughout the length and breadth of the land, with varieties rather of combination or disposition, than of the component members, is an undoubted fact, well known to and admitted by all who have paid any attention to the subject. But whence these forms arose, whether from a natural process of gradual development, or from some esoteric principle of symbolical design; whether they originated in some real or pretended secret of freemasonry, or, lastly, in mere accident or caprice, are curious questions, which, so far as the author is aware, have never yet been made the subjects of much investigation. Again, how far the same forms were arbitrary or obligatory in ancient freemasonry work, how far they emanated from some particular source, and were dispensed by authority through the country, or were assumed by some tacit agreement on the part of the masons themselves, are equally interesting speculations, though, perhaps, equally difficult to determine. However this may have been, it is quite certain that a strict intercourse must have been kept up between the members of this body of artisans, or almost every ancient church would exhibit new and strange varieties in the details of its mouldings. When we consider the difficulty which then existed of constant and speedy communication between distant parts of the country, this general resemblance and uniformity, not only indeed in mouldings, but in all the parts and features of Church architecture, must appear still more surprising. There is in all these enough of licence and variety to make the knowledge of them a comprehensive and difficult study to us, and yet such evident resemblance and decided adherence to rule, as to convince us that some system must have been observed both in designing and executing them."

From the apparent extent of the inquiry, the want of a reduction to leading principles, it has been shirked by modern architects, and many works consequently exhibit in the mouldings most striking anachronisms and confusion of styles. We are disposed to think the book now before us will do much towards inducing a more careful investigation of the subject, and we recommend our readers not merely to buy it, but to study it carefully.

The necessity of copying mouldings in order to understand them is very properly urged, and the precautions to be observed in using the lead tape for that purpose, are pointed out. The practice of copying mouldings by the eye alone is of great importance; by practice the eye becomes familiar with the varieties, and in a very short time, a power of delineating with accuracy may be attained, which renders the student independent of mechanical aids, and enables him to proceed more rapidly than by any other means. The planes to which the mouldings lie, and the relative proportion of the parts are chief points to be observed.

"In considering any series of mouldings previously to copying them, the first point is to lay down on paper the various planes, that is, to ascertain the plan of the arch, or other feature, before the mouldings were cut. When this is done by accurate measurement, the rest of the process becomes comparatively easy, and the most complex and extensive combination, which it appears at first sight impossible to copy with any thing like accuracy, may be re-